

REMARKS

The drawings are objected to in the Office Action for not showing every feature of the invention specified in the claims, specifically, the features of a controller, a control circuit, and "mounted on a single LSI." The drawings are further objected to for failing to show features described in the specification, namely the features of "a switching signal is preferably provided to the selector 15 via a switching signal input terminal C that is an external terminal of a controller LSI" and "controller LSI".

In the drawings as original filed, Fig. 2 illustrates the switching signal as input to terminal C. As noted in the Office Action, terminal C is described in the specification as the external terminal of a controller LSI. Moreover, paragraph [0041] of the application as published by the USPTO states that "[t]he controller of the CD-ROM drive 1 includes the data processing circuit 4 and is integrated as an LSI." Paragraph [0041] further states that it is "preferable that the selector 15 be integrated in the LSI." Paragraph [0041] goes on to state that "if the firmware storing memory 7 is integrated in the LSI, the firmware write wires 17 are also integrated in the LSI." Finally, paragraph [0041] states that "[t]he microcomputer 6 and the buffer RAM 5 may also be integrated in the LSI."

Thus, in response to the objection to the drawings, enclosed for the Examiner's approval is a corrected drawing for Fig. 2. In accordance with the foregoing description in the specification, the correction adds an item identified with reference numeral 32, encompassing the data processing circuit 4, firmware storing memory 7, firmware write wires 17, microcomputer 6, and buffer RAM 5. Also, in the foregoing amendment, we have inserted reference numeral 32 after "controller LSI" in paragraph [0025] in the specification to be consistent with the enclosed drawing correction. For the same reason, we have inserted reference numeral 32 after each occurrence of "controller" in paragraph [0041] of the specification.

It is believed that the drawing correction and amendment to the specification overcomes the objections to the drawings.

The Office Action additionally objects to the abstract and independent claim 1 for use of non-idiomatic English, namely, the phrase "a terminal is provided for used". The above



amendment revises the phrase to replace the word "used" in the phrase with "use". The Office Action further objects to a punctuation error in the specification for a comma being immediately followed by a period. The above amendment deletes the comma. We believe that these amendments overcome the objections to the specification, abstract, and claims.

The Office Action rejects claim 2 under the second paragraph of 35 USC 112 for being indefinite. In particular, the Office Action notes a lack of antecedent basis for the recitation "the control circuit". The above-amendment replaces the phrase "control circuit" with "controller" for which there is antecedent basis.

Finally with respect to grammar, we have amended claims 1 and 2 to replace "comprises" in claims 1 and 2 to "comprising."

Prior Art Rejections

The Examiner rejected claims 1-3, 6-8, and 13 as being anticipated by Hu (US Patent No. 6,170,043). We submit however that Hu does not teach or suggest a controller that connects a wire and a terminal "so that the firmware is directly written to the memory by an external device," as recited in amended claims 1 and 2. We further submit that Hu does not disclose or suggest a data processing system including a memory for storing firmware, "wherein the firmware is directly written to the memory by the external device ..." as recited in amended claims 6 and 8.

Hu is directed to updating the firmware in a CD-ROM system, that is, a CD-ROM system in which firmware has already been written. As described at Col. 4, lines 8-14, updating is performed by an update program installed through either reading a CD 100 or downloading into the computer 216. Hu needs an extra memory 202 for storing a firmware writing program and a flash memory 210 for storing firmware program code data (code data is temporarily stored in a buffer memory 212), separate from the memory 202. In contrast, the inventions recited in amended claims 1, 2, 6, and 8 do not need a memory for storing such a firmware writing program because firmware program code data is directly written to a memory from an external device. Accordingly, the inventions recited in amended claims 1, 2, 6, and 8 have the advantage

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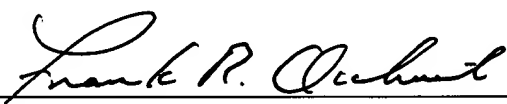
of reducing a circuit area when compared to devices like Hu's CD ROM system. Consequently, we submit that independent claims 1-2, 6 and 8 and their dependent claims are novel and nonobvious over Hu.

The Office Action rejects claims 13 and 14 under 35 USC 103 over Hu in view of Martwick (US Patent Application Publication US 2003/0041182). Martwick was cited as teaching that the memory, the data processing circuit and the selector are mounted on a single LSI. Martwick, however, does not disclose the features found to be lacking in Hu. Thus, we submit that because claims 13 and 14 both depend from claim 8, these dependent claims are patentable for at least the same reasons that claim 8 is patentable.

Enclosed is a Petition for One Month Extension of Time with a check for \$110.00 for the required fee. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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